

**ABSTRACT**

Comprehensive universal configurable interface for electrical, electronic, and electromechanical control, sensing, and actuation. Circuit, apparatus, method, and signal set for interfacing an electrical or electronic component or a mechanical component generating or effecting an electrical or electronic signal to a control system or device. Comprehensive universal input/output interface system, circuit, and method for interfacing such components and control systems that send or receive analog or digital voltage and/or current inputs over a large range of voltages and/or current without hardware or software switches. Interface and method includes and needs only two terminals for the connection of sensor or actuator. Provides plurality of operation mode circuits to accomplish the following functions: digital input, digital output, analog input, analog output, and others. Supports either voltage or current input and output, and voltage and current capabilities over a broad dynamic range. Single physical package for user configuration into a broad set of applications.

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